Can you save the Great Barrier Reef?; An ambitious project is drawing upon tourism to conduct crucial research

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Body

My head in the water and my back to the sky, I float over giant clams and past towering stacks of bright coral. Clown fish dart below, their brilliance only overshadowed by confident purple parrotfish. Lazily, I begin my paddle back to shore, when I spot a sea turtle grazing on seagrass. Unperturbed by my presence, it calmly swims to the surface, where together, we float.

It's exactly how I always imagined Australia's Great Barrier Reef: vibrant, colourful, a world of its own. But if the headlines were to be believed, what I'm seeing is impossible. The coral must be a mirage; the turtle, a ghost.

When I mentioned my travel plans to friends, I was surprised to be asked if the reef was still alive. It's been more than half a decade since a catastrophic mass bleaching event grabbed the world's attention, yet rumours of the reef's untimely demise persist.

It all started in 2016, when Outside magazine published a satirical obituary announcing the reef had "passed away after a long illness." Twitter lit up. The tongue-in-cheek article may have been meant to stress the urgency of climate change, but readers took it at face value. In truth, only about 30 per cent of the reef was lost during the nine-month marine heat wave.

The backlash exposed a rift deeper than Marianas Trench between the tourism industry and the scientific community. The latter argued that the alarmist messaging was necessary for political and societal change. Tourism operators countered that it would only lead to apathy - doom and gloom doesn't make for a happy holiday.

Six years on, the truth remains somewhere in the middle. The reef hasn't died, but it's not well. Bleaching - which occurs when a sustained rise in temperature causes coral to expel their symbiotic algae, turning them white - is a natural event that some coral can recover from.

The problem is the frequency; there have been at least three known mass bleaching events since 2016, including one this year. Warming waters aren't the only concern; there's also ocean acidification, outbreaks of coral-eating crown-of-thrones starfish, and cyclones, a by-product of climate change.

Yet, scientists stress there's still a chance to save the reef, and many conservationists believe tourism will play a critical role on its road to recovery.

One of these people is Andy Ridley. The founder of Earth Hour, he's now based in Cairns, where he's working with his latest organization: Citizens of the Great Barrier Reef.

"The story of the reef is nuanced," says Ridley. "You'll find areas that are really damaged, and you'll find areas that are still extraordinary and pristine."

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Ridley started Citizens after realizing that huge gaps of knowledge still exist about the reef's overall health. Although often called the world's largest living structure, it's actually made up of 3,000 individual reefs and 900 islands stretching for 2,300 kilometres off the coast of Queensland.

Its sheer magnitude means only five to 10 per cent is regularly surveyed, while an estimated 70 per cent has never been documented. A reliance on modelling means we're still learning what's recovering, what's not, and where the high-value coral - responsible for providing new life to the rest of the reef - is located.

Ridley aims to change that. Since 2020, he's been working with scientists and Indigenous sea rangers (environmental managers who combine traditional knowledge with modern conservation practices) to survey, map and model the entire reef system through the annual Great Reef Census. This data is used by researchers and the Great Barrier Reef Marine Park Authority to alter management practices, such as how to best respond to crown-of-thorn outbreaks.

It's an ambitious project, and one that wouldn't be possible without tourism operators.

"You can't do research without boats, and if you imagine all the expertise sitting among tourism operators and dive instructors - it's all there," he says. According to Ridley, the sense of "us versus them" that existed in 2016 has since been replaced by co-operation.

More than 20 local tourism operators have donated time and resources to the project, including Passions of Paradise, which deployed an autonomous underwater drone to speed up survey work in 2021.

Tour operators are also instrumental to ongoing reef restoration. Port Douglas-based Wavelength Reef Cruises - run by marine biologists John and Jenny Edmondson - has spent the past four years working with the University of Technology Sydney to plant more than 70,000 coral fragments across 27 sites. The work is done by staff on tourism boats, who tend to the coral nurseries while their guests explore the reef, with an 85 per cent coral survival rate.

"Coral is very good at trying to grow - nature tries to win out. If it's looked after, then its recovery is better than people might expect," says John Edmondson.

And in April 2022, the new, $6.6-million (AUD) Reef Magic pontoon launched at Moore Reef off the coast of Cairns. For visitors, it offers a stable platform to experience the reef. For researchers, it has a lab to evaluate samples, including those from a trial of "reef stars": sand-coated steel structures upon which coral fragments can grow.

Tourists can also get involved, by assisting in surveying on snorkel or dive tours. (Just last year, citizen scientists discovered a previously unrecorded 400-year-old giant coral.) The information gathered is helping scientists better understand coral spawning events and how humans can intervene to improve the reef's resilience.

It's enough to give even a skeptic (me) a sliver of hope. Yet, as I walk along the pier in Cairns and look at the massive boats docked - each capable of carrying hundreds of visitors out to the reef on any given day - I can't help but think there's a great white shark in the pool. Tourists have to fly to get to Cairns, and greenhouse gas emissions continue to be the leading cause of climate change.

Conflicted by my own complicity, I ask Ridley what he thinks.

"If people stop flying here, then the boats stop," says Ridley. Without boats, research slows. And without tourists, he argues, the reef could lose its greatest advocates.

I see his point, but I'm still wrestling with it when I arrive at the Museum of Underwater Art in Townsville. Created by sculptor Jason deCaires Taylor, the museum's main drawcard is its 158-tonne underwater greenhouse, complete with planter boxes and a chandelier. Made of cyclone-resistant porous cement, it's designed to be colonized by coral over time.

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It's not the first structure built on the John Brewer Reef. In the late '80s, this was the site of a seven-storey floating resort, with 200 rooms, a tennis court and a night club. Looking at the horseshoe of pristine reef around me, it's hard to believe. It's also the reminder I need. Tourism will always exist, but it can be more conscientious than it's been in the past - a force for good, and not just for fun.

I jump in. Sunshine cuts through the water's surface, making massive schools of damselfish a shimmery wall of blue. Below, there's evidence of the most recent bleaching: whitened staghorns and fluorescent coral, an indication of stress. But for the most part, what I see is a testament to life.

Writer Jessica Wynne Lockhart travelled as a guest of Tourism and Events Queensland, which did not review or approve this article.

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